What Is Claimed Is:

1. A composition for effecting therapy of a tumor or an infectious disease in a patient, comprising:

(A) a first conjugate comprising a targeting moiety and a first therapeutic agent, wherein the targeting moiety selectively binds to a marker substance produced by or associated with the tumor or infectious disease causing agent and to a low molecular weight hapten;

(B) optionally, a clearing agent; and

(C) a second conjugate comprising a low molecular weight hapten to which said first conjugate binds and a second therapeutic agent, wherein the second therapeutic agent is the same as or different from the first therapeutic agent.

2. The composition of claim 1, wherein said first and second therapeutic agents are selected from the group consisting of radionuclides, cytokines, drugs, toxins, and boron addends.

3. The composition of claim 2, wherein said first and second therapeutic agents are radionuclides.

4. The composition of claim 3, wherein each of said radionuclides emit different levels of radiation.

5. The composition of claim 3, wherein said first and second therapeutic agents are selected from the group consisting of P-32, P-33, Sc-47, Cu-64, Cu-67, As-77, Y-90, Ph-105, Pd-109, Ag-111, I-125, Pr-143, Sm-153, Tb-161, Ho-166, Lu-177, Re-186, Re-188, Re-189, Ir-194, Au-199, Pb-212, and Bi-213.

6. The composition of claim 1, wherein said first conjugate comprises a targeting moiety which selectively binds to a marker substance produced by or associated with an infectious disease causing agent.

7. The composition of claim 2, wherein said second therapeutic agent comprises a cytokine.

8. The composition of claim 2, wherein said first and second therapeutic agents are mixtures of at least two radionuclides, drugs, toxins, cytokines, or boron addends.

9. The composition of claim 2, wherein said first therapeutic agent is a radionuclide and said second therapeutic agent is a drug, a toxin, a cytokine, or a boron addend.

10. The composition of claim 9, wherein said first therapeutic agent is selected from the group consisting of I-131, I-125 and At-211.

11. The composition of claim 9, wherein said second therapeutic agent is a drug and said drug is selected from the group consisting of taxol, nitrogen mustards, ethylenimine derivatives, alkyl sulfonates, nitrosoureas, triazenes, folic acid analogs, pyrimidine analogs, purine analogs, vinca alkaloids, antibiotics, enzymes, platinum coordination complexes, substituted urea, methyl hydrazine derivatives, adrenocortical suppressants, hormones, antagonists, camptothecin, calicheamicin, and endostatin.

12. The composition of claim 9, wherein said second therapeutic agent is a toxin and said toxin is selected from the group consisting of abrin, alpha toxin, diphtheria toxin, exotoxin, gelonin, pokeweed antiviral protein, ricin, saporin, DNAse and RNAse.

13. The composition of claim 2, wherein said first therapeutic agent is a drug or toxin and said second therapeutic agent is a radionuclide or a boron addend.

14. The composition of claim 13, wherein said first therapeutic agent is a drug and said drug is selected from the group consisting of taxol, nitrogen mustards, ethylenimine derivatives, alkyl sulfonates, nitrosoureas, triazenes, folic acid analogs, pyrimidine analogs, purine analogs, vinca alkaloids, antibiotics, enzymes, platinum

coordinations complexes, substituted urea, methyl hydrazine derivatives, adrenocortical suppressants, hormones, antagonists, camptothecin, and endostatin.

15. The composition of claim 13, wherein said first therapeutic agent is a toxin and said toxin is selected from the group consisting of abrin, alpha toxin, diphtheria toxin, exotoxin, gelonin, pokeweed antiviral protein, ricin, saporin, DNAse and RNAase.

16. The composition of claim 14, wherein said second therapeutic agent is a radionuclide and said radionuclide is selected from the group consisting of P-32, P-33, Sc-47, Cu-64, Cu-67, As-77, Y-90, Ph-105, Pd-109, Ag-111, I-125, I-131, Pr-143, Sm-153, Tb-161, Ho-166, Lu-177, Re-186, Re-188, Re-189, Ir-194, Au-199, At-211, Pb-212, and Bi-213.

17. The composition of claim 14, wherein said second therapeutic agent is a boron addend.

18. The composition of claim 15, wherein said second therapeutic agent is a radionuclide and said radionuclide is selected from the group consisting of P-32, P-33, Sc-47, Cu-64, Cu-67, As-77, Y-90, Ph-105, Pd-109, Ag-111, I-125, I-131, Pr-143, Sm-153, Tb-161, Ho-166, Lu-177, Re-186, Re-188, Re-189, Ir-194, Au-199, At-211, Pb-212, and Bi-213.

19. The composition of claim 15, wherein said second therapeutic agent is a boron addend.

20. The composition of claim 1, wherein said targeting moiety comprises an antibody.

21. The composition of claim 20, wherein said antibody is a bispecific antibody capable of specifically binding to at least one epitope on said marker substance and to said low molecular weight hapten.

22. The composition of claim 21, wherein said antibody is multivalent.

23. The composition of claim 22, wherein said antibody targets multiple, different antigens on said tumor.

24. The composition of claim 22, wherein said antibody targets multiple, different epitopes of the same antigen on said tumor.

25. The composition of claim 1, wherein said targeting moiety comprises an antigen binding antibody fragment.

26. The composition of claim 25, wherein said targeting moiety is capable of specifically binding to at least one epitope on said marker substance and to said low molecular weight hapten.

27. The composition of claim 25, wherein said targeting moiety is multivalent.

28. The composition of claim 27, wherein said targeting moiety targets multiple, different antigens on said tumor.

29. The composition of claim 27, wherein said targeting moiety targets multiple, different epitopes of the same antigen.

30. The composition of claim 1, wherein the clearing agent is anti-idiotypic to the targeting moiety of the first conjugate.

31. The composition of claim 26, wherein the anti-idiotypic monoclonal antibody is substituted with galactose and biotin residues.

32. The composition of claim 1, wherein the first and second conjugates contain radionuclides which emit different levels of radiation.

33. The composition of claim 1, wherein the first therapeutic agent comprises a bispecific antibody or antibody fragment and a cytokine.

34. The composition of claim 33, wherein the second therapeutic agent comprises a radionuclide.

35. The composition of claim 1, wherein the first therapeutic agent comprises bispecific antibody or antibody fragment and a radionuclide.

36. The composition of claim 35, wherein the second therapeutic agent comprises a cytokine.

37. A composition for effecting therapy of a tumor or an infectious disease in a patient, comprising:

(A) a first conjugate comprising a targeting moiety, a first member of a binding pair, and a first therapeutic agent, wherein the targeting moiety selectively binds to a marker substance produced by or associated with the tumor or with the infectious disease causing agent;

(B) optionally, a clearing agent; and

(C) a second conjugate comprising a complementary member of said binding pair and a second therapeutic agent, wherein the second therapeutic agent is the same as or different from the first therapeutic agent and is selected from the group consisting of a drug-polymer conjugate, a PEG-drug conjugate and a drug-liposome conjugate.

38. A composition for effecting therapy of a tumor or an infectious disease in a patient, comprising:

(A) a first conjugate comprising a targeting moiety and a first therapeutic agent, wherein the targeting moiety is multivalent and selectively binds to multiple epitopes of a marker substance produced by or associated with the tumor or infectious disease causing agent or binds to multiple marker substances produced by or associated with the tumor or infectious disease causing agent,

(B) optionally, a clearing agent; and

(C) a second conjugate comprising a complementary member of said binding pair and a second therapeutic agent, wherein the second therapeutic agent is the same as or different from the first therapeutic agent,

wherein the binding pair is selected from the group consisting of (a) complementary DNA fragments, (b) complementary peptide oligonucleotides, and (c) corresponding enzymes and prodrug substrates.

39. The composition of claim 38, wherein the first conjugate comprises a bispecific antibody or antibody fragment and a cytokine.

40. The composition of claim 37, wherein the second conjugate comprises a radionuclide.

41. The composition of claim 38, wherein the first conjugate comprises bispecific antibody or antibody fragment and a radionuclide.

42. The composition of claim 41, wherein the second conjugate comprises a cytokine.

43. The composition of claim 1, wherein the targeting moiety of said first conjugate comprises a naked antibody, and said first therapeutic agent is said targeting moiety of said first conjugate.

44. The composition of claim 37, wherein the targeting moiety of said first conjugate comprises a naked antibody, and said first therapeutic agent is said targeting moiety of said first conjugate.

45. The composition of claim 1, wherein the targeting moiety of said first conjugate comprises a naked antibody, and said first therapeutic agent is said targeting moiety of said first conjugate.